

CLASS 404, ROAD STRUCTURE, PROCESS, OR APPARATUS**SECTION I - CLASS DEFINITION**

This class provides for (1) highway, pathway or walkway structure, per se, including the form or arrangement of such structure for vehicular or foot traffic; (2) processes for making, installing, repairing or maintaining such structure; and (3) apparatus for installing, making, repairing or maintaining such structure where such structure, apparatus or process is not otherwise classifiable as either (a) specifically provided for in other loci or (b) of such general utility as to be provided for elsewhere on the basis of such general utility. (See Subclass References to the Current Class, below, for known collections of such nature and the particular lines of demarcation.)

- (1) Note. Claims not controlling in Patents prior to 1930. Patents prior to 1930 have not necessarily been classified by claims so that the placement of these old patents does not necessarily indicate lines of classification. Many of such old patents have been classified in accordance with their total disclosure. Most of the patents, however, regardless of their age have been assigned in accordance with their claimed subject matter.
- (2) Note. This class (404) does not provide for materials or compositions, per se, used in the construction, maintenance or repair of roads. The identification of a specific road component, otherwise solely set forth in terms of its constituent materials, without significant structural description of said component is still not enough to effect classification in this class. See the search note, below, under Subclass References to the Current Class, for the specific loci for such materials and compositions.

SECTION II - SUBCLASS REFERENCES TO THE CURRENT CLASS

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 1, 2, 8, 19, 25, 34, 36, 37, 44, 45, 47, 70, 99, 134, and 135 for subject matter related to static structures, (e.g., buildings).
- 1, for subject matter related to railways.

- 1, 10, 35, and 47 for subject matter related to railways: surface track.
- 2, 9, 101, and 111 for subject matter related to fluid sprinkling, and diffusing.
- 2, 48, 87, and 96 for subject matter related to static molds.
- 2, 76, 77, 91, 95, and 133 for subject matter related to hydraulic and earth engineering.
- 2, for subject matter related to pipes and tubular conduits.
- 4, and 25 for subject matter related to fluid handling.
- 4, for subject matter related to liquid purification or separation.
- 6, and 25 for subject matter related to movable or removable closures.
- 6, for subject matter related to fences.
- 9, for subject matter related to card, picture, or sign exhibiting
- 9, 16 for subject matter related to signals and indicators.
- 9, for subject matter related to communications: electrical.
- 9, 12, 14, 15, and 22 for subject matter related to illumination.
- 9, for subject matter related to synthetic resins or natural rubbers.
- 14, 16, and 23 for subject matter related to optics: systems (including communication) and elements.
- 17, and 22 for subject matter related to stock material or miscellaneous articles.
- 19, and 76 for subject matter related to synthetic resins or natural rubbers.
- 19, for subject matter related to fire escape, ladder, or scaffold.
- 20, and 112 for subject matter related to abrading.
- 25, for subject matter related to ventilation.
- 25, for subject matter related to locks.
- 35, 89, 93, and 97 for subject matter related to brushing, scrubbing, and general cleaning.
- 72, and 94 for subject matter related to adhesive bonding and miscellaneous chemical manufacture.
- 72, and 84.05 for subject matter related to measuring and testing.
- 72, 75, and 76 for subject matter related to coating processes.
- 73, and 99 for subject matter related to handling: hand and hoist-line implements.
- 75, for subject matter related to plastic and nonmetallic article shaping or treating processes.
- 76, for subject matter related to compositions.

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| 77, | and 95 for subject matter related to stoves and furnaces. | | ence to Class 172, below, for related subject matter). |
| 77, | for subject matter related to electric heating. | 40, | Card, Picture, or Sign Exhibiting, subclasses 541+ for illuminated signs, subclasses 584+ for signs in general, and especially subclass 612 for highway signs which impart traffic information (e.g., "STOP", "OHIO AVE", "NO PARKING", etc.) whether permanently affixed to the road or pavement or merely mounted near the highway. Inclusion of significant road structure, other than required to accommodate the sign or sign support, will effect classification in Class 404. |
| 81, | for subject matter related to classifying, separating, and assorting solids. | | |
| 85, | 90, 117, 121, 124, 129-131 for subject matter related to earth working. | | |
| 87, | and 90 for subject matter related to stone working. | | |
| 90, | for subject matter related to excavating. | | |
| 90, | for subject matter related to solid material comminution or disintegration. | | |
| 90, | for subject matter related to mining or in situ disintegration or hard material. | 52, | Static Structures (e.g., Buildings), appropriate subclasses, for structure of such general utility as not to be limited to highway or walkway use; see particularly subclasses 174+ for the combination of vertical building structure and road or pavement features. |
| 90, | and 133 for subject matter related to boring or penetrating the earth. | | |
| 92, | 95, 101, and 107 for subject matter related to dispensing. | | |
| 93, | for subject matter related to coating apparatus. | | |
| 94, | for subject matter related to coating implements with material supply. | 105, | Railway Rolling Stock, subclasses 375 and 422 for auxiliary floors and floors for railway rolling stock. |
| 94, | for subject matter related to article dispensing. | | |
| 97, | and 114 for subject matter related to plastic article or earthenware shaping or treating: apparatus. | 106, | Compositions: Coating or Plastic, for materials, per se, especially materials which set or harden to retain a given shape; e.g. concrete, asphalt, etc. -although specially designed for paving or roadways; Included in Class 106, with the compositions, are processes of preparing such compositions where such process is not otherwise restricted to road building; e.g. (a) merely molding, laying or coating a Class 106 composition to form a roadway combined with preparing the composition is classifiable in Class 106 while (b) preparing a Class 106 composition combined with treatment or handling relating either to characteristics of other road components or to another process step peculiar to road building is classifiable in Class 404. |
| 101, | for subject matter related to conveyors, chutes, skids, guides, and ways. | | |
| 113, | for subject matter related to agitating. | | |
| 117, | and 133 for subject matter related to tools. | | |
| 122, | for subject matter related to motor vehicles. | | |
| 122, | for subject matter related to metal working. | | |
| 133, | for subject matter related to tool driving or impacting. | | |

SECTION III - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

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| 14, | Bridges, subclass 73 for floor or special roadway structure of bridges. | 114, | Ships, subclass 85 for process of and apparatus for making ship decks. |
| 16, | Miscellaneous Hardware, subclasses 4+ for artificial turf fasteners. In general the securement means for the amusement, exercise and game surfaces provided for in Class 472, Class 482, Class 473 are considered skin to carpet fasteners unless specific road structure is claimed, that is, more than mere ground support or an earth stake. | 118, | Coating Apparatus, appropriate subclasses, for apparatus for surface coating or impregnating the earth, roadway or roadway portions (including striping or marking machines). The combination of means to coat, or impregnate, and other means for in situ treatment of the earth, roadway or roadway portion, is classifiable in Class 404. |
| 37, | Excavating, appropriate subclasses, for apparatus and processes relating to digging, moving or handling earth; especially subclasses 381+ for scraping or grading a roadbed. (See refer- | 126, | Stoves and Furnaces, subclass 271.2 for specific pavement heater structure (e.g., burners) and subclass 343.5 for furnaces for melting other than snow. |

- 172, Earth Working, appropriate subclasses, for apparatus for and process of working the earth in situ. While Class 404 provides for simple, smooth surfaced, compacting rollers and compacting rollers with blunt ended teeth (i.e., sheep's foot roller), which rollers are used both to compact the earth and roadways; Class 172 provides for other rolling, rotating or orbitally moving earth working devices (see particularly the types set out under subclasses 518+) and for devices classifiable in Class 404, combined with or convertible to, Class 172 devices. In general, the area of overlap between these two classes-other than as indicted above-can only be resolved by a judgement decision based on large measure on (a) whether utility is general (for Class 172) or limited to road building (for Class 404) or (b) which of the two classes provides specific subclasses for the subject matter involved or (c) current placement of documents in both classes. Obviously, a search will in many instances be required in both classes.
- 174, Electricity: Conductors and Insulators, subclass 39 for road structure combined with and restricted to underground electrical installations.
- 182, Fire Escape, Ladder, or Scaffold, subclass 222 for platform or workman support structure.
- 241, Solid Material Comminution or Disintegration, appropriate subclasses, for process of and apparatus for breaking up of road material, per se. The combination of roadway material comminution and distribution to form a new roadway is classifiable in Class 404. (See reference to Class 299, below).
- 249, Static Molds, subclasses 1+ for in situ-type molds for forming roadways or roadway portions and not combined with means to work or treat the earth.
- 252, Compositions, appropriate subclasses, for compositions of matter though solely disclosed as useful in road making.
- 264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclasses 31+ for processes of forming structural installations in situ; which include only the steps of molding monolithic uniform composition structure and/or compacting, treating, stressing or surface working the material to perfect the molding or curing of the molded body (forming parts by a molding operation and uniting in situ by a second molding operation is also classifiable in Class 264, subclasses 31+); subclass 69 for processes of molding which include the step of vibrating, agitating, or jarring; and subclass 349 for processes of molding which include the step of tamping.
- 299, Mining or In Situ Disintegration of Hard Material, appropriate subclasses, for breaking up of roadway structure. The combination of roadway comminution and distribution to form a new roadway is classifiable in Class 404.
- 366, Agitating, appropriate subclasses (e.g., 241+) for specific agitating structure.
- 405, Hydraulic and Earth Engineering, subclasses 15+ for foraminous mats used as erosion control; subclasses 36+ for specific drainage structure (e.g., pipe, culvert); subclasses 132+ for tunnels; subclasses 231+ for installation of a pier or pier shape; and subclasses 258.1, 270, and 271 for earth treatment other than for a roadbed.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, appropriate subclasses for apparatus involved in fabricating elements off site (precast elements formed then transported to the site).
- 427, Coating Processes, subclasses 136+ for methods of applying protective coatings on a pavement, and appropriate subclasses for applying a protective coating to components (e.g., rebar).
- 523, Synthetic Resins or Natural Rubbers, subclasses 132+ for a composition having utility in situ as a soil conditioner or stabilizer; subclass 150 for a friction element composition which imparts nonskidding or nonslipping properties to surfaces used in pedestrian or vehicular movement; and subclass 172 for a composition designed to be applied for marking pavements or roads, or for signs defining traffic lanes, pedestrian crosswalks, traffic instruction, or as an applied reflex-reflector.

SECTION IV - GLOSSARY

AGITATION

Brisk shaking, regular or motion, or to-and-fro movement of material or device to effect any one or several of many different purposes during road building, (e.g., vibration imparted to road aggregate for compaction, agitation of uncured road slab to provide a smooth upper surface or agitation of material to mix constituents). Individual subclass definitions must be checked for possible special limitations imposed upon the use of this term - e.g., subclasses 113 and 133.

DOWEL

Rod or bar reinforcement-often relatively movable with respect to road, pavement or joint components-which reinforcement bridges, links or joins adjacent components so that load, stress or movement of one component is both inhibited by, and transmitted to, another component.

FINISHING

Treatment or working of material to either (1) modify the internal orientation of constituents of a mass of material (usually a mixture of road aggregate) or (2) provide a desired surface characteristic for such massed material. The terms "finishing" has been loosely used in patent literature to cover many different processes and devices so long as the desired result is achieved. For this reason the term has not been used in subclass titles.

JOINT

(1) Structure linking or uniting adjacent components, or (2) a gap between adjacent components or (3) a parting member or spacer between adjacent components.

LAYER

Stratum, course, lamina, coating or sheet which is sufficiently recognizable as such regardless of the constituent material involved. Interface blending of otherwise distinct layers still leaves plural layers.

MODULE

Monolithic component such as brick, block, slab, panel, tile, sheet, precast or preformed member, etc. which may be utilized (1) in repetitious juxtaposition with similar components, (2) with nonmodular components or (3) alone to constitute road structure.

PAVEMENT

Hardened, treated or "finished" surface of a roadway-or an upper "layer" thereof-exposed to the wear of traffic. This roadway portion may constitute either (1) the entire roadway with respect to untreated or unworked earth or (2) no more than an upper course of a multilayer structure. In many instances, the "pavement" itself is made up of more than one distinct stratum.

TOOL

Material modifying or treating instrumentality actually contacting material (e.g., a roller or screed component of a road making machine) or the most proximate instrumentality guiding or directing modifying or treating energy against material (e.g., a nozzle of a soil stabilization device or a heating means of a road repair machine).

SUBCLASSES

1 This subclass is indented under the class definition. Subject matter relating to the arrangement of (a) one road to another (e.g., multilevel cross-road interchange), (b) one type of traffic way to another (e.g., vehicle roadway with separate sidewalk portion) or (c) a road to the earth (e.g., an elevated highway).

- (1) Note. A land-fill roadbed which raises a highway above the level of the terrain is not considered to be "elevated" for this subclass and is therefore classifiable in subclasses below on other features.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), subclasses 174+ for the combination of a road structure with building a structure-e.g., multilevel building with a ramp.
- 104, Railways, appropriate subclasses, for a railway system.
- 238, Railways: Surface Track, subclass 8 for highway crossings at grade over railways.
- 244, Aeronautics and Astronautics, subclasses 114+ for a landing field arrangement.

2 This subclass is indented under the class definition. Subject matter relating to a depression, swale or channel extending along a road, often at the juncture of a roadway and a curb, at the road surface, within the road or beneath the road for the purpose of guiding or limiting water flow.

- (1) Note. Included in this subclass is drainage structure for road joints and road beds.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 7+, for curb structure, per se. Curb and gutter combination is classifiable in subclass 2.
- SEE OR SEARCH CLASS:
 52, Static Structures (e.g., Buildings), subclasses 11+ for a cover with an eave or valley gutter, subclasses 118+ for an enclosure with fluid guiding port to a usable space, subclasses 131+ for a burial vault with fluid guiding feature, subclass 210 for a flue with a fluid directing feature and subclass 219 for a flue connected to a building structure.
 138, Pipes and Tubular Conduits, appropriate subclasses for conduit structure, per se.
 239, Fluid Sprinkling, Spraying, and Diffusing, subclass 202 for spraying means combined with street or road curb structure.
 249, Static Molds, subclass 8 for curb and gutter molds, per se.
 405, Hydraulic and Earth Engineering, subclasses 36+ for subject matter relating to drainage means of general utility.
- 3 This subclass is indented under subclass 2. Drain or gutter structure with provision for holding or protecting pipe, cable, electrical wiring and the like.
 (1) Note. Much of the structure provided for in this subclass relates to combined curb-gutter components.
- 4 This subclass is indented under subclass 2. Drain or gutter structure with openings to lead water runoff into a drainage system.
 SEE OR SEARCH CLASS:
 4, Baths, Closets, Sinks, and Spittoons, subclass 510 for a pool drain.
 137, Fluid Handling, subclasses 247.11+ for street curb drainage inlet devices including a liquid seal.
 210, Liquid Purification or Separation, subclasses 153+, especially subclasses 163+ for structural installa-
- tions including grated drainage inlets, and subclasses 532.1+ for heavier constituent catch basins comprising street curb inlets.
- 5 This subclass is indented under subclass 4. Curb inlet structure comprising a distinct hood portion fitted into the curb or gutter.
- 6 This subclass is indented under the class definition. Subject matter relating to a controlling obstruction or barricade means for a road which physically determines the direction of, or stops, vehicular or pedestrian traffic.
 (1) Note. A barrier for this subclass includes "significant" road structure. Mere provision for mounting or supporting on or along a roadway without particular relationship to road configuration, road contour or pavement-base structural details is not considered "significant". See reference to Class 256, below.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 9+, for structural means on or in a road which, while providing for traffic control, does not impose an absolute control.
- SEE OR SEARCH CLASS:
 49, Movable or Removable Closures, subclasses 9, 33, 34, 35, 49, 131+, and 263+ for controlled barriers.
 52, Static Structures (e.g., Buildings), appropriate subclasses for specific barrier structure or detail.
 244, Aeronautics and Astronautics, subclasses 114+ for aircraft barriers.
 246, Railway Switches and Signals, subclasses 270+ for railroad crossings including a vehicular barrier.
- 7 This subclass is indented under subclass 6. Guide or barrier structure comprising an obstruction projecting above and along a road generally at the edges of, and coextensive with, said roadway and presenting a continuous extent except for crossing roads and driveways.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

2+, for curb structure combined with gutter or drain features.

SEE OR SEARCH CLASS:

188, Brakes, subclass 32 for a surface mounted barrier, bumper, or block which obstructs the passage of a vehicle wheel.

256, Fences, subclasses 1, 13.1, and 64 for an attenuated barrier (or a series of individual units which, as a group, form an attenuated-like barrier) which by its position, on or near a roadway, obstructs the passage of a vehicle or person.

- 8 This subclass is indented under subclass 7. Curb structure relating to embedded or fastened means for strengthening or shielding the nosing or lip-like portion of a curb.

SEE OR SEARCH CLASS:

52, Static Structures (e.g., Buildings), subclasses 177+ for exposed embedded elements to enhance the wear characteristics of a traffic receiving surface.

- 9 This subclass is indented under the class definition. Subject matter regulating the flow of vehicles or pedestrians by either modifying the pavement structure or by markers which extend above the pavement to guide vehicles, but do not provide specific information such as yield, stop, merge, etc.

- (1) Note. A sign, signal or reflector as such is not considered subject matter for Class 404, unless, road structure is modified beyond the mere mounting, holding or support for such component. For example, a "STOP" sign permanently fastened to a pavement or mid-island curb is not classifiable in Class 404, (see search note to Class 40, below); while the same sign counterbalanced within a recess in the roadway—ordinarily up and visible but capable of retraction into the recess when contracted by a vehicle wheel—classifiable in Class 404.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

6+, barrier means which physically determine the direction of, or stops, vehicular or pedestrian traffic.

SEE OR SEARCH CLASS:

40, Card, Picture, or Sign Exhibiting, subclasses 541+ for illuminated signs, subclasses 584+ for signs in general, and especially subclass 612 for highway signs which impart information (e.g., "STOP", "OHIO AVE", "NO PARKING", etc.) whether permanently affixed to a road or merely mounted nearby.

52, Static Structures (e.g., Buildings), subclasses 103+ for a land marker.

116, Signals and Indicators, subclass 63, for moving-type street traffic indicators.

248, Supports, subclasses 158 and 160 for a traffic director.

340, Communications: Electrical, appropriate subclasses, for electrical signals. Note particularly subclass 908.1 for barricade type.

359, Optics: Systems (Including Communication) and Elements, subclasses 515+ for signal reflectors and subclasses 543+ for signal reflectors mounting means. Class 359 provides for an optical feature, beyond the mere recitation of a lens or reflector, in combination with support structure; while Class 404 provides for an optical feature in combination with traffic barrier or traffic director means, e.g., a prismatic reflector set flush into a roadway is classifiable in Class 359, while a prismatic reflector on a small raised button-like member along a lane marker is classifiable in Class 404.

362, Illumination, subclass 153.1 for illuminating sources, and reflectors or supports therefore, adaptable to signaling.

441, Buoys, Rafts, and Aquatic Devices, subclasses 28 and 29 for floating devices (e.g., buoys) which are ballasted to control their movement.

- 523, Synthetic Resins or Natural Rubbers, subclass 172 for pavement marking composition.
- 10** This subclass is indented under subclass 9. Traffic director structure with means to resile after displacement by contact with traffic.
- SEE OR SEARCH CLASS:
238, Railways: Surface Track, subclass 381 for wheel depressable foot guards associated with rail structure.
441, Buoys, Rafts, and Aquatic Devices, subclasses 28 and 29 for orienting yielding floatable devices.
- 11** This subclass is indented under subclass 10. Yielding traffic director structure including means, other than the director itself, urging said director into operative position which means is housed within the road.
- (1) Note. Included here are spring, gravity counterbalanced and elastomer means for biasing.
- (2) Note. Included in this subclass are vibration inducing members with the capability to yield.
- 12** This subclass is indented under subclass 9. Traffic director structure extending along or across a road to channel the flow of vehicular or pedestrian traffic or to divide the flow into distinct separate paths.
- (1) Note. Generally the traffic directors in this subclass are elongated, or indefinite length, members.
- SEE OR SEARCH CLASS:
362, Illumination, subclass 153.1 for a pavement marker or strip with illuminating means.
- 13** This subclass is indented under subclass 12. Lane marker structure wherein the director is made up of a plurality of relatively short separate components inter nesting or interlocked one to the other.
- (1) Note. Included in these subclasses are concatenated director elements capable of establishing curved or angular traffic paths.
- 14** This subclass is indented under subclass 12. Lane marking structure in combination with a mirror-like component infused into or onto the surface of the director so as to cast back light from traffic and thus provide a visible as well as physical director.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
16, for vibration inducing director members with reflecting characteristics.
- 15** This subclass is indented under subclass 9. Traffic director structure for means set in or on a road to jar or shake a vehicle passing over said means.
- (1) Note. Included in this subclass are single or plural members to configured or arranged as to set up repeated or rhythmic shaking.
- (2) Note. Included in this subclass is a single member which will allow a vehicle to pass over it without damage and primarily intended to serve as a visual director.
- (3) Note. Traffic directors whose upper surface is in the same plane as the pavement are classified in this class, subclass 9.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
11, for a yieldable vibration inducing member.
- SEE OR SEARCH CLASS:
362, Illumination, subclass 153.1 for a pavement marker or strip with illuminating means which usually is detectable by a vehicle.
- 16** This subclass is indented under subclass 15. Vibration inducing structure in combination with a mirror-like component so as to cast back light from traffic and this provide a visible as well as a physical director.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 14, for an attenuated lane marker impregnated with reflective material.

SEE OR SEARCH CLASS:

- 116, Signals and Indicators, subclass 63 for moving-type street traffic indicators not combined with significant road structure, e.g., merely mounted in or along roadway.

- 17** This subclass is indented under the class definition. Subject matter relating to a hardened surface to minimize the effects of wear of traffic.

- (1) Note. Substantially all roads and walkways include a pavement portion and the indented subclasses are distinguished from each other on the basis of either differences in pavement structure or in other component parts of the road or roadway.
- (2) Note. Attention is directed to the fact that while module construction of pavement is set out in subclasses 29 and 34+, below, many subclasses higher in the schedule include module structure distinguished by features characterized in the particular subclass title and definition.

SEE OR SEARCH CLASS:

- 244, Aeronautics and Astronautics, subclass 114 for a specialized landing field construction.
- 273, Amusement Devices: Games, appropriate subclasses for a particular playing field surface.
- 428, Stock Material or Miscellaneous Articles, appropriate subclasses, for a stock material product in the form of a single or plural layer product, and see the reference to Class 404 in the definition of Class 428, section VI.
- 472, Amusement Devices, subclasses 85+ for a surface or turf structure used in amusement racetracks, subclasses 88+ for a surface structure used for the movement thereon of wheeled or gliding amusement vehicles (e.g., a slide surface in the form of artificial ski

slope), and subclasses 92+ for a surface or turf structure of an arena, track, court, playing field, etc. which is intended to be used for athletic or exhibition events classifiable herein.

- 473, Game Using Tangible Projectile, for a particular playing field of court surface.

- 18** This subclass is indented under subclass 17. Pavement structure comprising (a) blocks, slabs or precast monoliths - not fabricated in situ on the road - united with, or by, (b) an in situ-formed surface layer.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 29, for pavement bed having a layer of blocks.
- 34+, for pavement structure made up of preformed modules. Many such preformed modular pavements include in situ material cast between modules. However, this may be distinguished from subclass 18 of Class 404 by the absence of any in situ cast surfaces equal to, or larger than, the extent of the modules being joined or united.

- 19** This subclass is indented under subclass 17. Pavement structure relating to characteristics which tend to reduce skidding or render the traffic surface nonslippery.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 32, for rubber or rubber-like pavement which may or may not be anti-skid. Subclass 19 provides for structure clearly set out as providing an anti-skid function.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), subclasses 177+ for a stairs or other building component of general application having a wear resisting or friction increasing traffic carrying surface.
- 182, Fire Escape, Ladder, or Scaffold, subclasses 222 and 228.2 for anti-skid features.

- 520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 150 for a composition containing a synthetic resin having utility as a friction element to impart nonskidding or nonslipping properties to surfaces used in pedestrian or vehicular movement or to processes of preparing said composition.
- 20** This subclass is indented under subclass 19. Anti-slip surface structure characterized by gritlike grains or particles (natural or synthetic) embedded into the surface.
- SEE OR SEARCH CLASS:
51, Abrasive Tool Making Process, Material, or Composition, for an abrasive material or composition, per se, and see the search notes thereunder.
- 21** This subclass is indented under subclass 19. Anti-slip surface structure characterized by the inclusion of exposed metal elements in the surface.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
70, for a pavement including terrazzo-like components with exposed metal members at the surface disclosed as anti-slip in character. Where the metal members are substantially coextensive with pavement thickness and also with either pavement width or length, such member is considered to be a reinforcement for subclasses 70, and 134+, for reinforcement structure, per se.
- 22** This subclass is indented under subclass 17. Pavement structure having a transparent or translucent element which allows light through the pavement.
- (1) Note. Included here are many devices wherein the light admitting means is mounted in a vault cover. Because of the number and age of patents involved, no cross-reference is being made to subclasses 25+.
- SEE OR SEARCH CLASS:
220, Receptacles, subclasses 602 and 662+ for receptacles having transparent end and sidewalls respectively.
362, Illumination, subclass 326 for illumination refractors.
428, Stock Material or Miscellaneous Articles, subclass 67 for a stock material product which comprises an element embedded within a substrate and visible therein.
- 23** This subclass is indented under subclass 22. Light admitting structure wherein the light admitting element is replaceable without destruction of the supporting structure.
- SEE OR SEARCH CLASS:
359, Optics: Systems (Including Communication) and Elements, subclasses 642+ for lens elements, per se, and lens housings of general utility.
- 24** This subclass is indented under subclass 22. Light admitting structure wherein the housing or support for the light admitting means is Portland cement concrete.
- (1) Note. The term "frame" is here intended to signify more than a mere lens, glass setting or seal made of cement.
- 25** This subclass is indented under subclass 17. Pavement structure relating to movable means adapted to form part of the pavement surface while spanning an opening in said surface, which adaptation enhances the traffic bearing function of this pavement portion; e.g., inhibits tilting, rotation, "jumping", noise, etc.
- (1) Note. Nominal Reference to location in road or pavement, to strength, or details as to fit, will not require classification in Class 404.
- (2) Note. A complete search for vault cover-closure must include subclasses 22+ above. See (1) Note under subclass 22.

- SEE OR SEARCH CLASS:
- 49, Movable or Removable Closures, appropriate subclasses for similar closures—even if called “manhole covers” or “vault closures” -which do not directly provide for traffic bearing characteristics subclasses 21, 34, 41, and 465 for manhole covers and frames and subclasses 504 and 505 for frames.
- 52, Static Structures (e.g., Buildings), subclasses 19+ for a manhole.
- 70, Locks, subclasses 158+ for locking structure associated with a manhole cover.
- 137, Fluid Handling, subclass 371 for a valve or water well cover.
- 220, Receptacles, subclasses 220+ for manhole cover structure.
- 292, Closure Fasteners, appropriate subclasses for securing devices for a manhole cover.
- 454, Ventilation, appropriate subclasses for a movable closure combined with means to supply, distribute, regulate, treat or direct air in a tortuous path or to change the direction of flow of the air.
- 26** This subclass is indented under subclass 25. Vault cover-closure structure including means to vary the relative height or angularity of the cover structure with respect to the pavement.
- SEE OR SEARCH CLASS:
- 49, Movable or Removable Closures, subclass 505 for an expandable or contractable frame.
- 27** This subclass is indented under subclass 17. Pavement structure having specifics or tails of the substructure supporting said pavement.
- (1) Note. Mere nominal inclusion of a supporting substructure-e.g., “roadbed”, “base”, or “foundation” will not result in classification in this subclass. See subclass 71 for bed structure, per se.
- 28** This subclass is indented under subclass 27. Bed structure wherein at least one stratum consists of either one or more selected or fabricated film, lamina, webs or modules.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 34+, for modular road structure and see further search notes thereunder.
- 29** This subclass is indented under subclass 28. Preformed, or selected, element layer structure wherein the stratum is made up primarily of a plurality of uniform cuboid-like members; e.g., bricks, cobble stones, slabs, wooded billets, etc.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 18, for combined sheet and preformed module pavement.
- 34+, for preformed modules, per se, and see search notes thereunder.
- 30** This subclass is indented under subclass 28. Preformed, or selected, element layer structure wherein the stratum is made up primarily of a plurality of nonuniform cuboid-like members, e.g., natural field stones.
- (1) Note. Generally, the nonuniform members for this subclass where arranged in close rank and file still leave significant voids while the blocks of subclass 29 can be arranged, though not necessarily, to virtually eliminate such voids.
- 31** This subclass is indented under subclass 27. Bed structure comprising two or more strata.
- (1) Note. The tendency of one stratum to merge into another will not exclude classification in this subclass where such separate strata are in fact set out or recognized.
- SEE OR SEARCH CLASS:
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclasses 71 and 276 for road layers using an adhesive.
- 32** This subclass is indented under subclass 17. Pavement structure incorporating rubber, natural or synthetic, or a similar elastic-like material into the wearing surface of the roadway.

- (1) Note. While asphalt and similar bituminous pavement are somewhat elastic they are not considered “rubber” or “rubber-like” for this subclass and are classifiable on other characteristics in this class.
- 33** This subclass is indented under subclass 32. Rubber or rubber-like structure including a projecting portion which provides an interlock means with an undersurface or bed.
- 34** This subclass is indented under subclass 17. Pavement structure made up of a plurality of precast, preshaped or precut monoliths generally not fabricated in situ on the roadway.
- (1) Note. Included here, and in indented subclasses, are individual preformed module components of a pavement.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 18, for a pavement structure of preformed modules combined with an in situ sheet surface layer.
- 29, for bed structure including preformed blocks.
- SEE OR SEARCH CLASS:
- 52, Static Structures (e.g., Buildings), subclasses 603+ for preformed stone-like modules of general utility and see notes thereunder for other related loci in Class 52.
- 428, Stock Material or Miscellaneous Articles, subclasses 44+ for module or block composition (e.g., fiberglass reinforcement).
- 35** This subclass is indented under subclass 34. Preformed module structure wherein the individual module, while covering a relatively large area as compared to a single brick or flagstone, is designed for both rapid and repeated installations as well as ease of transport.
- (1) Note. This subclass relates, in large part, to preformed modules for temporary aircraft landing strips or for military and temporary access roads.
- SEE OR SEARCH CLASS:
- 15, Brushing, Scrubbing, and General Cleaning, subclasses 215 and 238 for mats adapted for cleaning boots and shoes.
- 238, Railways: Surface Track, subclass 14 for a traction mat or pad adapted to facilitate the extraction of a vehicle from sand or mud.
- 244, Aeronautics and Astronautics, subclasses 114+ for landing field blast deflector panels.
- 36** This subclass is indented under subclass 35. Portable mat structure of open lattice-like configuration.
- SEE OR SEARCH CLASS:
- 52, Static Structures (e.g., Buildings), subclasses 633+ for openwork, trellis, grille or screen construction of general utility and see search notes thereunder for other loci of similar structure.
- 37** This subclass is indented under subclass 34. Preformed module structure with means to separate one module edge or face from another.
- (1) Note. This separation is usually for the reception of a binder or filler to secure individual modules in place.
- SEE OR SEARCH CLASS:
- 52, Static Structures (e.g., Buildings), subclass 603 for stone-like modules of general utility with integral spacer means. This subclass must be searched for this feature.
- 38** This subclass is indented under subclass 37. Spaced means which are formed, and unitary, with the module itself.
- 39** This subclass is indented under subclass 38. Integral spacer structure provided by an oblique or chamfered peripheral surface portion of the module so that the top planar surfaces of juxtapositioned modules are spaced from each other.

- 40** This subclass is indented under subclass 34. Preformed module structure wherein individual modules are united or held against relative movement by means of a discrete key.
- 41** This subclass is indented under subclass 34. Preformed module structure wherein individual modules include integral peripheral configurations adapted to mate with adjacent modules.
- 42** This subclass is indented under subclass 34. Preformed module structure wherein the individual modules are so configured, or so placed, as to form a decorative design.
- 43** This subclass is indented under subclass 34. Preformed module structure wherein the module rests on a member embedded in the road base, on a rail-like bar or both.
- 44** This subclass is indented under subclass 34. Preformed module structure comprising two or more distinct and dissimilar materials united to form a module.
- (1) Note. The dissimilar materials are not “mixed”. Rather, they form distinct molded or otherwise shaped portions of the module.
- (2) Note. Plural wood laminate or similar strips together with variations in the grain orientation is not considered composite structure for this subclass, see subclass 46.
- (3) Note. A reinforcement external of, or encasing, a module-and of dissimilar material is considered to constitute composite structure for this subclass. On the other hand, dissimilar material of grid, mesh, bar or rod form substantially embedded within the structure of a module is considered to be reinforcement for subclass 45.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
67, for a compound or composite parting strip for a road joint.
- SEE OR SEARCH CLASS:
52, Static Structures (e.g., Buildings), subclass 612 for modules of general utility with layered stone-like components. This subclass must be searched for this feature.
- 45** This subclass is indented under subclass 34. Preformed module structure characterized by the inclusion of a generally coextensive grid or network of attenuated elements to strengthen the module structure against failure induced by load stresses.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
70, for a pavement structure including reinforcement means.
- SEE OR SEARCH CLASS:
52, Static Structures (e.g., Buildings), subclasses 600+ for a stone-like module with elongated reinforcing means. These subclasses must be searched for this feature.
- 46** This subclass is indented under subclass 34. Preformed module structure made of wood or wood products.
- 47** This subclass is indented under subclass 17. Pavement structure incorporating a component between or linking adjacent or contiguous pavement portions which component bridges the gap between or connects said portions.
- (1) Note. Included in this and indented subclasses are road portions including joint means though the road portion is not clearly identified as a “pavement”.
- (2) Note. Included in this and indented subclasses is pavement structure with reinforcement structure extending from one pavement portion to another.
- (3) Note. Included here is road joint structure, per se, not elsewhere classifiable, either in some other class or higher in this class schedule.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 70, for pavement structure including reinforcement.
- 134+, for road reinforcement structure, per se.
- SEE OR SEARCH CLASS:
- 49, Movable or Removable Closures, subclasses 475.1+ for a closure seal (e.g., striker, gasket or weather strip) and see the search notes there under for the loci of other seals.
- 52, Static Structures (e.g., Buildings), subclasses 393+ for relatively yielding preformed separator and subclasses 698+ for assembled in situ-type anchor or tie structure of general utility and see search notes thereunder for other pertinent loci.
- 238, Railways: Surface Track, subclass 8 for a street crossing which includes an expansion joint.
- 405, Hydraulic and Earth Engineering, subclasses 135 and 153 for a tunnel expansion joint.
- 48 This subclass is indented under subclass 47. Joint structure incorporating a removable component (e.g., mold element) utilized for in situ making of a joint, or part of a joint, which component is absent from the final completed pavement joint.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 74, for process of forming a joint.
- 87+, for apparatus used in forming a joint.
- SEE OR SEARCH CLASS:
- 249, Static Molds, subclasses 1+ and 189+ for forms used for a road.
- 49 This subclass is indented under subclass 47. Joint structure provided with some open space within the joint itself, or within the ends of the ends of adjacent pavement portions, so that joint material may flow into such space when the joint is subjected to compressive forces.
- 50 This subclass is indented under subclass 47. Joint structure wherein the abutting peripheral configuration of adjacent pavement portions is modified to provide for mating or interengagement such portions generally to limit relative movement or transmit stresses.
- 51 This subclass is indented under subclass 50. Offset or keyed slab end structure combined with other load transfer structure; e.g., plates, pins, rods, etc., that extend from one slab end to the contiguous slab end.
- (1) Note. See the subclass immediately below for the many variant forms of load transfer means used in conjunction with road pavement.
- 52 This subclass is indented under subclass 47. Joint structure wherein a load transmitting member extending from one pavement portion or slab to another is segmented to allow limited pivotal movement of one portion with respect to another.
- 53 This subclass is indented under subclass 47. Joint structure wherein a load transmitting member extending from one pavement portion to another includes means spanning the space between said portions and underneath the ends of said portions.
- 54 This subclass is indented under subclass 53. Underlying bridge structure provided with other means also spanning the space between pavement portions and resting on an upper surface of said portions.
- 55 This subclass is indented under subclass 53. Underlying bridge structure made up of at least two L-shaped elements back to back in opposite orientation.
- 56 This subclass is indented under subclass 47. Joint structure wherein a load transmitting member, extending from one pavement portion to another, includes means spanning the space between said portion which means extend into said portions intermediate the top and bottom of said portions.
- 57 This subclass is indented under subclass 56. Mid-slab bridge structure wherein spacing means includes at least two elements in flat surface contact within the joint space and free to slip with respect to each other.

- 58** This subclass is indented under subclass 57. Sliding plate structure wherein the flat surfaces in slipping contact are in a plane normal to the thickness of the pavement.
- 59** This subclass is indented under subclass 56. Mid-slab bridge structure wherein a load transmitting support structure includes (a) means for yieldably bearing against the end of a load transmitting bar or rod or (b) means for reducing friction incident to movement of said bar or rod by providing a grease-like coating.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
60, for sleeved, at joint, dowel structure.
63, for slide tube at dowel end.
- 60** This subclass is indented under subclass 56. Mid-slab bridge structure wherein a load transmitting component is either (1) provided with housing or bushing structure to facilitate slipping of said component under stress or (2) made up of at least two parts interfitted or socketed one to the other, both housing or interfitted located at or in the juncture of adjacent pavement portions.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
59, for lubricated dowel structure.
63, for slide tube at dowel end.
- 61** This subclass is indented under subclass 56. Mid-slab bridge structure including either (1) a means that holds and positions the load transmitting member (a plate, rod, bar, etc.) at one side of a joint, usually within one slab, with or without midpoint spacer or parting strip means or (2) a spacer or parting strip located between slab ends constituting the sole means to hold and position the load transmitting member.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
68, for strip structure plus supporting bracket or stake.
- 62** This subclass is indented under subclass 56. Mid-bridge structure provided with means for positioning or holding the outer extremity, of the load transmitting member.
- 63** This subclass is indented under subclass 62. Dowel end support structure which includes a bushing or sleeve ("whistle") to facilitate relative slipping of the dowel under stress.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
59, for lubricated dowel structure.
60, for sleeved, at joint, dowel structure.
- 64** This subclass is indented under subclass 47. Joint structure limited solely to a precast, pre-shaped or precut component or components other than metal (e.g., rubber, wood, plastic, bituminous mixes, etc.).
- SEE OR SEARCH CLASS:
52, Static Structures (e.g., Buildings), subclass 396.04 for a nonmetallic spacer in a building.
- 65** This subclass is indented under subclass 63. Preformed nonmetallic joint structure wherein a component insertable, or prepositioned, between slab ends has a particular outer configuration.
- (1) Note. "Bar", "board", "strip", etc. is not considered a configuration for this subclass and classification would be elsewhere on some other characteristic.
- 66** This subclass is indented under subclass 64. Preformed nonmetallic joint structure comprising two or more distant and dissimilar material either (a) one surrounding the other or (b) in a contiguous layers or lamina.
- (1) Note. Included here are components referred to as "parting strips".
- 67** This subclass is indented under subclass 47. Joint structure comprising at least two parallel attenuated distinct and dissimilar materials united to form the component between pavement portions.
- (1) Note. Included here are components referred to as "parting strips" when such component includes a metal element.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 44, for a compound or composite preformed module, per se.
- 66, for a compound or composite nonmetallic preformed joint component.
- 68** This subclass is indented under subclass 47. Joint structure wherein a filler board, division component or demarcation barrier is provided with a sustainer, positioning member or sub-strata engaging fastener.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 87, for a support insertable with the expansion joint.
- 69** This subclass is indented under subclass 47. Joint structure wherein the joint structure itself, or a supplementary means, extends the full width of the contiguous pavement portions and serves either to shield the joint against foreign material or to sustain elastomeric material in the upper part of the space between contiguous pavement portions.
- 70** This subclass is indented under subclass 17. Pavement structure characterized by the inclusion of a general coextensive grid or network of attenuated elements-bars, rods, mesh, expanded metal, etc. to strengthen the pavement structure against failure induced by bending, compressive or tensional stresses.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 45, for a preformed module, per se, including reinforcement means. This subclass must be searched for this feature.
- 47+, for pavement structure including joint means and see (2) note.
- 100, for apparatus for reinforcement material placing.
- 134+, for reinforcement structure, per se. This subclass must be searched for this feature.
- SEE OR SEARCH CLASS:
- 52, Static Structures (e.g., Buildings), appropriate subclasses-particularly subclasses 633+ for open-work and 720+ for elongated structure-suitable for embedding in settable material to form a composite structure which strengthens the whole; and see search notes thereunder for the loci of related structure.
- 71** This subclass is indented under the class definition. Subject matter relating to road structure and not provided for in the preceding subclasses.
- 72** This subclass is indented under the class definition. Subject matter relating to a method, or mode or procedure, for making a road or road components not elsewhere classified.
- (1) Note. See reference to Class 264 under the class definition of Class 404.
- SEE OR SEARCH CLASS:
- 73, Measuring and Testing, subclasses 105 and 146 for measurement of the road profile.
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses for a process of, and apparatus for, bonding or laminating of general utility.
- 165, Heat Exchange, appropriate subclasses for in situ pavement or for heating material during processing.
- 427, Coating Processes, subclasses 136+ for a method of coating a pavement.
- 73** This subclass is indented under subclass 72. Process including a step of manipulating, placing, or modifying a prefabricated road component.
- SEE OR SEARCH CLASS:
- 294, Handling: Hand and Hoist-Line Implements, subclasses 62+ for devices used in hoisting modules.
- 74** This subclass is indented under subclass 72. Process including a step of making or modifying a seam or gap in a roadway to accommo-

date relative movement of the roadway structure.

- (1) Note. Such relative movement is generally either temperature or road induced.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 48, for joint structure with transitory installation means.
87, for means to install or form a joint.

SEE OR SEARCH CLASS:

- 125, Stone Working, subclass 14 for cutting a joint in a set or hardened pavement.

- 75** This subclass is indented under subclass 72. Process including a step of modifying or working the ground, pavement or roadbed in place.

- (1) Note. In situ treatment does not encompass on location removal of earth or roadway material for processing—even though such processing is contiguous to the original locale. Such removal is classified on other bases. See search notes to Classes 37 and 172 under the class definition of Class 404.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 90+, for apparatus which comminutes the earth or road surface, in situ.
95, for apparatus for heating the earth or road surface.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclasses 105 and 146 for measurement of the road profile.
264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclasses 31+ for forming a structural installation in situ.
405, Hydraulic and Earth Engineering, subclass 258.1, specifically subclass 302.4 for earth treatment or control for reinforcement or stabilization against unwanted movement or deterioration of the earth.
427, Coating Processes, subclasses 136+ for methods of coating a pavement.

- 76** This subclass is indented under subclass 75. In situ treatment including a step of conglomerating or combining minute surface particles or earth components into larger aggregate units or into a relatively firm mass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 91, for apparatus to comminute earth or roadway in situ.
92, for apparatus for in situ material preparation.
95, for apparatus for heating the earth or road surface.

SEE OR SEARCH CLASS:

- 252, Compositions, subclass 88.1 for dust conglomerating compositions.
405, Hydraulic and Earth Engineering, subclasses 263+ for general subject matter relating to the stabilization of an earthen formation by addition of a foreign substance (e.g., binder) to the formation.
427, Coating Processes, subclasses 136+ for a method for coating the earth.
520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclasses 132+ for a composition containing a synthetic resin and having utility in situ as a soil conditioner or stabilizer or to processes of preparing said composition.

- 77** This subclass is indented under subclass 75. In situ treatment including the application of external means to raise the temperature of the ground or pavement.

- (1) Note. Processes whereby heat is generated by internal chemical reaction are classified elsewhere on the bases of other process steps.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 79+, for processes involving heating steps no limited to in situ application.
95, for a means to heat earth or road surface.

SEE OR SEARCH CLASS:

- 34, Drying and Gas or Vapor Contact With Solids, appropriate subclasses for drying paving material.
- 110, Furnaces, appropriate subclasses for specific heating means.
- 126, Stoves and Furnaces, subclasses 271.2 and 343.5 for specific pavement heaters and melting devices, respectively.
- 219, Electric Heating, subclasses 600+ for inductive heating, subclasses 678+ for microwave heating, and subclasses 764+ for capacitive dielectric heating.
- 405, Hydraulic and Earth Engineering, subclass 131 for a general process or apparatus for applying heat to an earth formation.

78 This subclass is indented under subclass 75. Process including a step of elevating or a depressed portion of a roadway.

79 This subclass is indented under subclass 72. Process including the application of external means to raise the temperature of road building material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 77, for processes of in situ road heating (and see notes thereunder).
- 95, for apparatus to heat earth or road surface.

80 This subclass is indented under subclass 79. Heating process with a step or steps for the distinct manipulation or treatment for each of two or more dimensionally varied road constituents.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 81, for separate handling of different sized aggregate without the step of heating.

81 This subclass is indented under subclass 72. Process relating to a step or steps for the distinct manipulation or treatment for each of two or more dimensionally varied road constituents.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 80, for separate handling of different sized aggregate with heating.

SEE OR SEARCH CLASS:

- 209, Classifying, Separating, and Assorting Solids, appropriate subclasses for structure used in classifying and sorting materials.

82 This subclass is indented under subclass 72. Process including the successive formation of two or more distinct and different lamina.

- (1) Note. See references under the class definition to Classes 264 and 427 for processes of general utility relating to coating and molding of plural layers.

SEE OR SEARCH CLASS:

- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclasses 71 and 276 for layers using an adhesive.

83 This subclass is indented under the class definition. Subject matter relating to devices, machines or tools for constructing, repairing or maintaining roads.

- (1) Note. Apparatus for Class 404 is generally special purpose equipment. That is, general purpose devices equally useful for buildings or other static structures are usually not classified in Class 404. See the search notes under the class definition of Class 404 for the locus of such devices.

84.05 Automatic control:

This subclass is indented under subclass 83. Device including a condition responsive control comprising a means to sense a condition or change of condition of the device, road, or road material which sensing means activates another means to regulate or to control the device according to the condition sensed.

- (1) Note. The term “automatic control”, alone, in a disclosure is not enough to effect classification in this subclass, unless, the disclosure relates to sensing

and control means as indicated in the definition above.

- (2) Note. See search notes under Class 72, subclass 6; Class 83, subclass 399; Class 171, subclass 9; Class 172, subclass 2; and Class 173, subclass 2 for the loci of other automatic control” devices.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclasses 105 and 146 for determining pavement flaws.
 172, Earth Working, subclasses 2+ for automatic power control.
 280, Land Vehicles, subclasses 5.5+ for a general utility land vehicle including an active suspension responsive to a force encountered while the vehicle is in surface traversing motion; subclasses 6.15+ for a general utility land vehicle including means, interposed between the vehicle body, chassis, or frame and running gear thereof, for altering height or levelness of the vehicle body, chassis, or frame; or subclasses 638+ for a general utility wheeled land vehicle including means for altering a dimension of the vehicle or a part thereof, especially subclasses 43+ for a wheel vertically adjustable relative to the running gear.

84.1 Of material leveling means:

This subclass is indented under subclass 84.05. Automatic control wherein the sensor causes adjustment of a screeding or smoothing device.

84.2 Adjusted to a predetermined path:

This subclass is indented under subclass 84.1. Automatic adjustment of leveling means in which the adjustment is made to track a physical guide, e.g., wire, rope, string.

84.5 Adjusted to an acoustical or optical signal:

This subclass is indented under subclass 84.1. Automatic adjustment of leveling means wherein the adjustment is made to track an acoustical or optical signal, e.g., laser.

84.8 Specific to a sloped or curved application:

This subclass is indented under subclass 84.1. Automatic adjustment of leveling means wherein the adjustment is made to create an

inclined finished surface or a finished surface defined by a radius.

- 85** This subclass is indented under subclass 83. Device wherein a ground wheel (or wheel substitute such as a skid or runner) is so arranged that when said wheel is positioned to serve as a vehicular element, the road working tool does not contact the ground; and conversely, when said tool is operative with respect to the ground the wheel is inoperative as a vehicular element.

SEE OR SEARCH CLASS:

- 172, Earth Working, subclass 240 for similar structure and see notes thereunder for other loci.

- 86** This subclass is indented under subclass 85. Device wherein the road working instrumentality is fastened or mounted on an otherwise operative, but diverse, device such as a dump truck, scraper, tractor, etc., which other device serves only for traction purposes when said instrumentality is in road working position.

- 87** This subclass is indented under subclass 83. Device for constructing or cutting a seam or gap in a roadway to accommodate relative movement of the roadway and to assemble filler or parting strip structure in such gap.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 48, for joint structure with transitory installation means.
 74, for process of making a joint.

SEE OR SEARCH CLASS:

- 125, Stone Working, subclass 14 for cutting a joint in a stone-like material.
 249, Static Molds, subclass 9 for joint forming mold. See line between Classes 249 and 404 in Search Class Note thereunder.

- 88** This subclass is indented under subclass 87. Device including means to support load transfer structure extending from one pavement to another across the joint.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 47, for joint structure, per se, including load transfer means with dowel support, e.g., road chair; and
- 100, for positioning reinforcement means.
- 136, for road chair, per se.
- 89** This subclass is indented under subclass 87. Device for providing a slot or channel in road material prior to the setting or hardening or such material.
- (1) Note. Included here are devices which also insert material or joint structure into such slot after, or as, the slot is formed.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 93, for apparatus to mark or groove plastic or uncured road material which does not form a joint as defined in subclass 87.
- SEE OR SEARCH CLASS:
- 15, Brushing, Scrubbing, and General Cleaning, subclass 235.3 for a motor-joint finisher, groover or simulator of general utility. Class 15 provides for a hand implement, Class 404 provides for more complex machine-like devices.
- 90** **With in situ means for both comminuting and treating; e.g., grading, oiling, stabilizing:**
This subclass is indented under subclass 83. Device for cutting, scarifying or disintegrating the pavement plus structure; e.g., drag, tamper, roller, liquid dispenser to level, smooth or bind the pieces of the underlying surface.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 76, for process of in situ treatment of earth or roadway.
- 92, for means to work material placed on the earth or roadway.
- SEE OR SEARCH CLASS:
- 37, Excavating, subclasses 381+ for scraping or grading a roadbed and see note thereunder for other loci in Class 37.
- 125, Stone Working, subclass 14 for cutting into a stone-like material.
- 172, Earth Working, appropriate subclasses, for apparatus for and process of working the earth in situ. See note to Class 172 in References to Other Classes, in the Class 404 class definition.
- 175, Boring or Penetrating the Earth, appropriate subclasses for process or apparatus forming holes or enlarging holes in the earth by disintegrating, cutting, chipping, etc. Generally, this dislocating relates to forming or enlarging a hole.
- 241, Solid Material Comminution or Disintegration, subclass 101.7 having ambulatory support but the material is still brought to the comminuting means.
- 299, Mining or In Situ Disintegration of Hard Material, appropriate subclasses for breaking up of a roadway or earth crust, per se.
- 91** This subclass is indented under subclass 90. Comminuting device with means to collect the products of comminution and, after some treatment or further preparation, return the material to the road surface.
- SEE OR SEARCH CLASS:
- 405, Hydraulic and Earth Engineering, subclass 179 for a pipe or cable laying apparatus having means to excavate a trench and redeposit the excavated material after the pipe or cable has been laid.
- 92** This subclass is indented under subclass 83. Device including means which act on or treat road building material lying on the road or right of way.
- (1) Note. "Material preparation" means does not include compacting or surface finishing means, for which see subclasses below.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 75+, for process of in situ treatment of earth or roadway.
- 90+, for apparatus to comminute earth or road, in situ.

SEE OR SEARCH CLASS:

- 222, Dispensing, appropriate subclasses for specific structure for dispensing.
- 366, Agitating, appropriate subclasses for specific means for mixing material in a hopper or for directly agitating material.

93 This subclass is indented under subclass 83. Device for making a visual indicia in or on top of the pavement.

- (1) Note. Included in this and the indented subclass are grooving machines.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 89, for appropriate devices to form a joint in a roadway.

SEE OR SEARCH CLASS:

- 15, Brushing, Scrubbing, and General Cleaning, subclass 235.3 for an implement for grooving plastic or uncured road material.
- 118, Coating Apparatus, appropriate subclasses, for apparatus for surface coating. The combination of a means to coat with other means for in situ treatment of the earth or roadway is classifiable in Class 404.

94 This subclass is indented under subclass 93. Surface marking device wherein the indicia is made on or affixed to a firm or usable roadway as distinct from a plastic or unstable intermediate structure.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 90, for pavement grinding.

SEE OR SEARCH CLASS:

- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclasses 575, 577, and 578 for applying adhesive to an article or strip.
- 221, Article Dispensing, appropriate subclasses, for specific structure to dispense an article.
- 401, Coating Implements With Material Supply, appropriate subclasses for a hand propelled device which applies a film or coating, to a surface and where the applicator or tool either (a) contacts the surface or (b) is no further removed from said surface than the film or coating thickness. With respect to (b) it must be noted that a dumping device which then spreads or levels road material into a window-like formation or significant stratum of roadway is not considered a "coating" device for Class 401.

95 This subclass is indented under subclass 83. Device including means for applying heat, directly or indirectly, to the road base, roadway or material thereon.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 77, for processes of in situ heating the ground or roadway (and see notes thereunder).

SEE OR SEARCH CLASS:

- 126, Stoves and Furnaces, subclass 271.2 for pavement heaters and 343.5 for melting other than snow.
- 222, Dispensing, subclasses 146.1 and 146.2 for a road material hopper with heating means.
- 405, Hydraulic and Earth Engineering, subclass 131 for apparatus in general for applying heat to an earth formation.

96 This subclass is indented under subclass 83. Device providing the road, or road portion, with a surface configuration, which configuration is other than the straight line made by a strike board or screed.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
118+, for screed or drag means to level or strike road material.
- SEE OR SEARCH CLASS:
249, Static Molds, subclasses 1+ for in situ molds for roadways and roadway portion not combined with means to work or treat the earth.
- 97** This subclass is indented under subclass 96. Profile shaping device either hand held and guided or hand traversed.
- SEE OR SEARCH CLASS:
15, Brushing, Scrubbing, and General Cleaning, subclasses 235.3+ for manually guided profile shapers.
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 458 for manually guided, substrate traversing shapers.
- 98** This subclass is indented under subclass 96. Profile shaping device configured to shape a raised edge of a road or a drainage path in a road.
- SEE OR SEARCH CLASS:
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 218 for female mold and shaping means.
- 99** This subclass is indented under subclass 83. Device for manipulating, placing or setting prefabricated road modules or components.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
73, for process of handling or treating preformed modular units.
- SEE OR SEARCH CLASS:
52, Static Structures (e.g., Buildings), subclass 749.1 for bricklaying machines of general application.
294, Handling: Hand and Hoist-Line Implements, subclasses 62+ for brick carriers.
- 100** This subclass is indented under subclass 83. Device for assembling or juxtaposing the bars, wires or mesh intended to strengthen the road against stress failure.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
70, for reinforced road structure combined with a pavement.
88, for means to position a dowel.
134+, for road reinforcement, per se.
- 101** This subclass is indented under subclass 83. Device for spreading, paving or sub-paving substance over the desired road area.
- SEE OR SEARCH CLASS:
193, Conveyors, Chutes, Skids, Guides, and Ways, appropriate subclasses for apparatus to disseminate material.
222, Dispensing, appropriate subclasses, for process and apparatus for disseminating material.
239, Fluid Sprinkling, Spraying, and Diffusing, subclasses 128+ for heating means combined with distributing apparatus and subclasses 146+ for merely spreading or distributing tar or asphalt or other liquid or a road or pavement.
- 102** This subclass is indented under subclass 101. Material distribution device wherein the spreading means is provided with means producing an additional active motion component serving to more firmly densify or pack down the substance being spread.
- (1) Note. The dynamic means of this subclass includes vibration means (for which see subclass 102 and notes thereunder) as well as rotary and reciprocatory means, except that reciprocal or back and forth movement of screed (in a direction transverse to the extent of a roadway along which said screed is advanced) is not considered either "agitation" or "dynamic" for this subclass.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
113+, 120 and 133, for other devices that utilize means with active motion com-

ponents to compress or pack down road material.

SEE OR SEARCH CLASS:

172, Earth Working, subclasses 170+ for a tool of that class which is diverse and includes a smooth, leveling roller.

103 This subclass is indented under subclass 102. Dynamic densifying device of the rotating drum type.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

117, for other rotating-drum type compacting means with vibratory or impact features.

122+, for rotating-drum type compacting means without vibratory features (and see search notes thereunder).

104 This subclass is indented under subclass 101. Material distribution device particularly adapted for working the supporting flank of a roadway or extension portion at the side of a roadway.

(1) Note. The means in this subclass provides some device modification relevant to working a road shoulder. In this instance, mere naming of the road area for intended use, without such modification, should be ignored for classification purposes.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

127, for slope, trench or shoulder roller means.

105 This subclass is indented under subclass 101. Material distribution device including storage means for paving material for delivery to transitory mold components along the road flanks which components are shiftable as the material distribution device advances.

(1) Note. The device is advanced at a rate allowing for sufficient curing or set-up, of the distributed matter, as to retain the shape imparted by the transitory mold forms.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

96, for apparatus for profile shaping with material supply means (and see search notes thereunder).

SEE OR SEARCH CLASS:

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 63+ for progressive molding for a building.

106 This subclass is indented under subclass 101. Material distribution device including storage means for paving material for delivery to mold components along the road flanks, which mold components also serve as a supporting and guiding traceway for the entire device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

96, for apparatus for profile shaping with material supply means (and see search notes thereunder).

119, for screed or drag means supported on rail-type side forms.

SEE OR SEARCH CLASS:

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 64 for progressive molding for a building including charging means.

107 This subclass is indented under subclass 101. Material distribution device adapted for a distribution to a limited road portion, usually a seam, break or the space between contiguous road portions.

SEE OR SEARCH CLASS:

222, Dispensing, appropriate subclasses, for apparatus and process of dispensing of general utility and particularly subclasses 146.1+ for dispensing combined with heating or material being dispensed; also see section 14 under class definition for loci of art relating to dispensing and shaping by extrusion.

- 108** This subclass is indented under subclass 101. Material distribution device with storage means to provide a source of paving or road building material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
96, for profile shaping apparatus with material supply means.
- SEE OR SEARCH CLASS:
198, Conveyors: Power Driven, appropriate subclasses for structure used to move material within a paver.
298, Land Vehicles: Dumping, subclasses 24+ for a hopper type vehicle for unloading material.
- 109** This subclass is indented under subclass 108. Material supply device utilizing a hopper reciprocable along a pivotally mounted supporting beam.
- 110** This subclass is indented under subclass 108. Material supply device utilizing a hopper with a controlled bottom discharge, which is readily movable over the road area, to distribute material.
- SEE OR SEARCH CLASS:
222, Dispensing, appropriate subclasses for structure for discharging material.
- 111** This subclass is indented under subclass 108. Material supply devices wherein the material is in fluid but nongaseous, form.
- (1) Note. Powdered or aggregate material which is capable of handling as a fluent material is not considered as a "liquid" for this subclass; and is classifiable on other characteristics.
- SEE OR SEARCH CLASS:
239, Fluid Sprinkling, Spraying, and Diffusing, subclasses 146+, for merely spreading or distributing tar, asphalt or other liquid; and subclasses 128+, for heating means combined with the distributing apparatus. Class 404 takes liquid distribution devices which includes other road treatment or the distribution of other than liquid material; e.g., combined distribution or road aggregate and tar.
- 112** This subclass is indented under subclass 83. Device wherein an earth or road working member moves in, and substantially on, the plane of the earth or roadway in a circular path.
- (1) Note. The working may include compacting or surface finishing.
- SEE OR SEARCH CLASS:
451, Abrading, subclass 353 for a floor surfacing rotary disk apparatus.
- 113** This subclass is indented under subclass 83. Device which shakes, or briskly moves, road material.
- (1) Note. The reciprocal or back and forth, movement of a screed (in a direction transverse to the extent of a roadway along which said screed is advanced) is not considered agitation for this subclass. See subclasses 119+, for such screed devices.
- (2) Notes. Repeated impacts or tamping blows substantially normal to and on the surface of road material is also not considered to be agitation for this subclass. See subclass 133.
- SEE OR SEARCH CLASS:
366, Agitating, subclasses 1+ for concrete and bituminous mixers including heating and discharging means not peculiar or restricted to road building.
- 114** This subclass is indented under subclass 113. Agitating device with shaking or vibratory means fastened directly to the leveling or striker member that is drawn across the material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
118+, for screed or drag means without additional agitating means.
- SEE OR SEARCH CLASS:
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 456 for a vibrating shaper.

- 115** This subclass is indented under subclass 113. Agitating device wherein the element for agitating the mass of material is substantially within or below the surface of said material.
- (1) Note. The vibrating mechanism itself may be anywhere, but the material contacting element is well within the mass of material.
- 116** This subclass is indented under subclass 115. Immersed agitating device wherein the immersed agitating element maintains a generally normal or perpendicular-like attitude respecting the earth or road surface.
- 117** This subclass is indented under subclass 113. Agitating device wherein the upper material surface is acted on by a rotary drum or cylinder which drum or cylinder includes means to jar or shake said drum while compacting the material surface.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 103, for roller device with dynamic means to densify material while distributing said material.
- 122+, for roller device without agitating means.
- SEE OR SEARCH CLASS:
- 74, Machine Element or Mechanism, subclasses 61 and 87 for specific vibrating structure.
- 81, Tools, subclasses 463+ for tools with impact-delivery means and see search notes thereunder for similar devices elsewhere classified.
- 172, Earth Working, subclass 40 for a vibrating tool. See search note to Class 172 under class definition of Class 404.
- 118** This subclass is indented under subclass 83. Device comprising a bar, beam or striker means to level or smooth previously laid road material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 96+, for a contoured striker means which imparts a profile to the road.
- 114+, for screed means combined with a material agitating means.
- SEE OR SEARCH CLASS:
- 172, Earth Working, subclasses 780 and 799.5 for a leveling device not specific to road building.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 218 for female mold and shaping means.
- 119** This subclass is indented under subclass 118. Screed device wherein the entire device is positioned and guided above a roadway by the side forms which also serve as a trackway.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 106, for material supply means supported on rail-type side forms.
- SEE OR SEARCH CLASS:
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 218 for female mold and shaping means.
- 120** This subclass is indented under subclass 118. Screed device provided with means to move said screed back and forth along its extent while traversing the material.
- (1) Note. A significant number of the devices in subclass 119 relate to reciprocating screed devices and a complete search for this characteristic must include subclass 119. Other than a few representative copies no patents have been cross-referenced from subclasses 119 to 120.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 102, for a material distribution device with a reciprocating screed.
- 114, for an agitator fastened on a screed.
- SEE OR SEARCH CLASS:
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 456 for vibrating shapers.

- 121** This subclass is indented under subclass 83. Device for working the earth or road material by rotating radially extending lugs or projections (generally blunt or flat shaped) on and into the material surface so that such lugs or projections move into and out of the material.
- (1) Note. This device is generally used to compact the material.
- (2) Note. Included here are devices specific to the details of the “sheep foot”, per se.
- (3) Note. See search note to Class 172 under the class definition of Class 404.
- SEE OR SEARCH CLASS:
172, Earth Working, subclasses 540+ for a rolling tool with circumferentially speed teeth or tines.
- 122** This subclass is indented under subclass 83. Device for working the earth or road material with one or more cylindrical members, which members roll across the material.
- (1) Note. This device is generally used to compact or “finish” the material.
- (2) Note. See search note to Class 172 under class definition of Class 404.
- (3) Note. Included here are plural roller element which can shift bodily (that is, a translation of their axes) normal or substantially normal to the material surface.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
103, for a material distribution device including a roller with dynamic means to compact material.
117, for an agitating device including a roller with vibrating or impact means.
121, for sheep foot roller means.
- SEE OR SEARCH CLASS:
180, Motor Vehicles, subclass 20 for a motor vehicle provided with one or more rollers for moving the vehicle.
492, Roll or Roller, for a roll, per se, not elsewhere provided for, and see the search notes thereunder.
- 123** This subclass is indented under subclass 122. Roller device wherein a trio of rollers, with generally parallel axes, are arranged one behind the other.
- 124** This subclass is indented under subclass 122. Roller device including specific features of the outer drum-like surface, e.g., perforated, corrugated, toothed, etc.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
121, for sheep foot rollers and details of the “sheep foot”.
- SEE OR SEARCH CLASS:
172, Earth Working, subclass 537 for a corrugated surface roller and subclass 539 for a smooth roller with a groove.
- 125** This subclass is indented under subclass 122. Roller device including two or more rolls mounted to rotate in substantial axial alignment but capable of adjustment so as to vary from in-line (generally horizontal) relationship of the individual axes of rotation to an angular relationship with respect to each other and the horizontal.
- 126** This subclass is indented under subclass 122. Roller device including two or more rolls mounted to rotate in substantial axial alignment but capable of adjustment so as to vary from in-line relationship of individual axes to either spaced parallel, or angular, relationship in the same general horizontal plane.
- 127** This subclass is indented under subclass 122. Roller device designed to work the flanks or inclined portions of the road-way.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
104, for material-distribution means for shoulder paving.
- 128** This subclass is indented under subclass 122. Roller device constituting either (a) an auxiliary or subsidiary means appended to a disparate type of apparatus or (b) part of a composite means made up of a roller device and a disparate device.

- (1) Note. The disparate apparatus or device may be of the type elsewhere provided for either in class 404 or some other class.
- 129** This subclass is indented under subclass 122. Roller device including means to care for or protect the roller periphery by providing a transient fluid coating or by removal of foreign material.
- SEE OR SEARCH CLASS:
172, Earth Working, subclass 606 for earth working devices combined with means to clean or scrape.
- 130** This subclass is indented under subclass 122. Roller device provided with either (a) means to vary the effective weight of the roller on the surface or (b) allow the effective weight of the roller to shift according to roller position.
- SEE OR SEARCH CLASS:
172, Earth Working, subclass 611 for earth working devices with weight means.
- 131** This subclass is indented under subclass 122. Roller device provided with means whereby an operator physically moves the roller across the roadway.
- SEE OR SEARCH CLASS:
172, Earth Working, subclasses 329+ for a device guided and propelled by a walking attendant.
- 132** This subclass is indented under subclass 122. Roller device including two or more rolls constrained to single axis relationship.
- 133.05 Tamper:**
This subclass is indented under subclass 83. Device for imparting distinct blows or impacts to the road surface or road material.
- (1) Note. Rapid back and forth agitation (a) not substantially normal to the surface of road material or (b) by means immersed or submerged in the road material, is considered to be agitation (for which, see subclasses 113+) or finishing (for which, see subclass 118) when such agitation is combined with means peculiar or restricted to road building. See search note to Class 366 under subclass 113.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
103, for a roller device with densifying and distributing means.
117, for a roller device with vibrating means.
- SEE OR SEARCH CLASS:
81, Tools, subclasses 463+ for tools with impact delivery means and see search notes thereunder for similar devices elsewhere classified.
173, Tool Driving or Impacting, appropriate subclasses for details of means to drive or deliver a blow to a tool.
175, Boring or Penetrating the Earth, subclass 135 for means to impact in earth penetrating means.
405, Hydraulic and Earth Engineering, subclass 271 for residual methods or apparatus for compacting an earth formation (e.g., compaction of the earth within a bore or channel).
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 425+ for a female mold including tamping means and subclass 456 for a shaper including powered vibrating means.
- 133.1 Manually guided:**
This subclass is indented under subclass 133. Tamper specifically adapted to be either hand held or hand traversed.
- 133.2 Attached to a disparate device:**
This subclass is indented under subclass 133. Tamper which is attached or attachable to an apparatus whose function is other than tamping (e.g., a backhoe or crane).
- 134** This subclass is indented under the class definition. Subject matter comprising a grid or network of attenuated elements, bars, rods, mesh, expanded metal, etc., intended to strengthen road structure against failure induced by load and environment stresses.
- (1) Note. Reinforcement structure which bridges the gap or space between adja-

cent pavement portions is considered as joint structure for subclass 47.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 45, for reinforced preformed module structure.
- 47+, for joint structure with load transfer components.
- 70, for reinforced pavement structure.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), appropriate subclasses, particularly subclasses 633+, for openwork and 720.1+ for elongated structure suitable for reinforcement use; and see the search notes thereunder for the loci of related structure.

- 135** This subclass is indented under subclass 134. Reinforcement structure including means to hold and position the reinforcement structure relative to the material it is intended to strengthen.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 62+, for joint structure including load transfer means with a road chair, and
- 136, for road chair structure, per se.

SEE OR SEARCH CLASS:

- 52, Static Structures (e.g., Buildings), subclasses 677+, for a spacer positioner of general utility.

- 136** This subclass is indented under the class definition. Subject matter relating to means to hold and position a road component relative to another road component.

- (1) Note. See subclass 135 and search notes thereunder.

END